

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,788	08/01/2001	Gordon James Yorke	OR02-13501	5192

22835 7590 09/08/2004

PARK, VAUGHAN & FLEMING LLP
508 SECOND STREET
SUITE 201
DAVIS, CA 95616

EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT PAPER NUMBER

2126

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/920,788	Applicant(s) YORKE ET AL.	
	Examiner Lewis A. Bullock, Jr.	Art Unit 2126	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. All of the claims detail wherein the object change information is distributed upon detecting that the object has been changed without the first system having to initiate a new connection with the second system. This limitation is not disclosed anywhere within the specification. Applicant states in the response that this limitation is taught on Figure 3, block 309 and page 7, lines 23-28 of the specification. A review of the figure only details the operation of changing the in-memory object cache in the remote persistent system. The figure provides no illusion or teaching as to how this is performed, i.e. by initiating a connection or not initiating a connection. A review of the cited section only details that in order to synchronize the remote in-memory cache, the synchronization executor receives the object change sets from the transaction manager. The object change sets are distributed to one or more remote object persistence systems. The one or more remote persistence systems receive the object change sets and merge the object chances sets into their in-memory object caches. There is no indication whatsoever that the detected object change information when distributed does not initiate a new connection with the second system. In fact, on page 12, line 30 – page 13, line 8 of the specification, Applicant details that a

publish/subscribe protocol is used to send change information. On page 17, lines 13-21, Applicant details that the object persistence systems can be managed when one or more on-line object persistence systems shutdown and startup. Therefore, object change information would in fact be distributed by another initiated connection if the subscribed persistent system is shutdown.

2. Claims 2, 3, 13, 22 and 31 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Independent claims 1, 12, 21, and 28 clearly claim the object change information is distributed upon detecting that the object has been changed **without** the first system having to initiate a new connection with the second system. Claims 2, 3, 13, 22, and 31 that depend from the independent claims, contradict this limitation by stating that a communication link is established wherein the object change information is distributed. Therefore, these claims are not enabling because the specification does not set forth how one sends change information without initiate a connection while at the same time establishing a connection.

3. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 recites the limitation "the communication link" in line

2. There is insufficient antecedent basis for this limitation in the claim. Claim 23 should depend from claim 22, not claim 21 as disclosed for proper antecedent basis.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over JONES (U.S. Patent 5,684,984) in view of TRENBEATH (U.S. Patent 6,324,587).

As to claim 1, JONES teaches a method for providing object change information from a first system (initial site) to a second system (other site) for synchronizing the second system (other site) with the first system (initial site), the second system (other site) having an object cache for storing objects (storage of objects / object database), the method comprising the steps of: changing an object (copy of an object) in the first system (initial site); determining object change information representing a change (change notice) made to the object (copy of an object) in the first system (initial site); and distributing the object change information (change notice) from the first system (initial site) to the second system (other site) to cause the second system (other site) to merge the object change information (change notice) into the object cache (storage of objects / object database) so as to synchronize the second system (other site) with the

first system (initial site) wherein the object change information is distributed upon detecting that the object has been changed (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37). JONES also teaches that the first system distributes the change information to the second system by a synchronization manager using function calls (col. 13, line 50-60; col. 14, line 22-64; col. 15, lines 7-23) and that the invention can be embodied in other specific forms without departing from the essential character thereof (col. 25, lines 51-57). However, JONES does not explicitly teach that the distribution does not initiate a new connection.

TRENBEATH teaches communication of change information between a plurality of clients (publication clients / subscription clients) through a publish-subscribe connection wherein the change is sent without the first system having to initiate a new connection with the second system (via a store and forward transport / Internet message protocol) (abstract; col. 6, lines 19-35; col. 9, lines 45-52; col. 10, lines 3-13; col. 11, lines 30-67). It would be obvious to one skilled in the art to combine the teachings of JONES with the teachings of TRENBEATH in order to allow clients of disparate system types and network connections may participate in the replicating of data objects and change maintenance to those data objects (col. 2, lines 46-50).

As to claims 2 and 3, JONES teaches establishing a communication link based on a publish/subscribe protocol (sites subscribe interest in changes and publishes

change notices to subscribed sites) between the first system (initial site) and the second system (other site) wherein the distributing step distributes the object change information (change notice) from the first system (initial site) to the second system (other site) through the communication link (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claim 4, JONES teaches registering the second system (other site) in the first system (initial site) prior to the distributing step (site subscribes for changes to the object) wherein the distributing step distributes the object change information (change notice) to the registered second system (other site) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claim 5, JONES teaches sending the object change information (change notice) to a database (object database of receiving site) for updating the object (object) in the database with the object change information (change notice) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claim 6, JONES teaches receiving an error message from the database when the updating of the object in the database fails (via preflight mode) and deciding

whether to make the change (col. 14, lines 29-35). It would be obvious to one skilled in the art at the time of the invention that if an error message is received regarding a change to be made, that one would decide not to perform that change.

As to claim 7, JONES teaches the first system (initial site) includes an object cache (object database / storage for objects) for storing one or more objects (copy of objects), and the step of merging the object change information (change notice) into the object cache (object database / storage for objects) of the first system (initial site) (via update objects / add objects to site / receiving a change notice regarding an object it registered for) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claim 8, JONES teaches the determining step determines the object change information (change notice) as a minimal set of information representing the change made to the object (value to be change / playback changes) (col. 10, lines 20-37).

As to claim 9, JONES teaches the determining step determines the object change information (change notice) to include a primary key (source) identifying the object and a change in the attribute of the object (variable to be updated) (col. 20, line 64 – col. 21, line 16; col. 10, lines 20-37).

As to claim 10, JONES teaches the object (object) includes an attribute (variable) for containing object data or a value of a relationship with one or more other object (copies of the object), and the determining step determines the object change information (change notice) to include a change made in the attribute of the object (variable to be updated) (col. 20, line 64 – col. 21, line 16; col. 10, lines 20-37).

As to claim 11, JONES teaches the first system (initial site) includes a cache for storing one or more objects (object database / storage for objects), comprising the steps of: receiving object change information (change notice) distributed from the second system (other site) and containing information of changes (information in change notice) made to one or more objects (objects) in the second system (other site); and merging the object change information (information in change notice) received from the second system (other site) into the objects (objects) in the cache of the first system (initial site) to synchronize the first system with the second system (synchronization of sites) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claims 12-20, refer to claims 1, 2, 4-9, and 11 for rejection. Claim 12 further details the first and second systems having object caches for storing objects and the distributing step causes the respective object in the second cache to be synchronized with the changed object in the first system. JONES teaches the first and second systems (sites) having object caches (object databases / storage for objects) for

storing objects and the distributing step causes the respective object in the second cache (object in one site that receives the change notice) to be synchronized with the changed object in the first system (object in another site that was changed) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claims 21-23, 26 and 27, reference is made to an apparatus, i.e. synchronization executor (synchronization system) that corresponds to the method of claims 1-3, 8 and 9 and is therefore met by the rejection of claims 1-3, 8 and 9 above. Claim 1 further details the system comprising a synchronization manager for obtaining object change information representing a change made to an object in the first system. JONES teaches the system comprising a synchronization manager (ObjectMan) for obtaining object change information (change notice) representing a change made to an object in the first system (site that sends a change notice) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claims 24 and 25, JONES teaches a connector (router) for obtaining the object change information (change notice) that is distributed from the second system (site) (via object subscribing to receive a publish change notice over a network environment) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14,

lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37; see also fig. 1).

As to claims 32-34, reference is made to a computer readable medium, an electric signal, and a computer program product that corresponds to the method of claim 1 and is therefore met by the rejection of claim 1 above.

As to claim 28, JONES teaches a persistence system for synchronizing an object (object) on a network, the network including a caching system (site) having an object cache for storing objects (object database / storage of objects), the persistence system (site) comprising: a transaction manager (program) for changing an object (object) and determining object change information (change notice) representing the change made to the object (object) for updating a database (object database / storage of objects); and a synchronization executor (ObjectMan) for obtaining the object change information (change notice) from the transaction manager (program) and distributing the object change information (change notice) to the caching system (site) to cause the caching system (site) to merge the object change information (change notice) into the object cache so as to synchronize the object (object in one site) in the object cache with the changed object in the persistence system (object in another site) wherein the object change information is distributed upon detecting that the object has been changed (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37 see also fig. 1). JONES

Art Unit: 2126

also teaches that the first system distributes the change information to the second system by a synchronization manager using function calls (col. 13, line 50-60; col. 14, line 22-64; col. 15, lines 7-23) and that the invention can be embodied in other specific forms without departing from the essential character thereof (col. 25, lines 51-57).

However, JONES does not explicitly teach that the distribution does not initiate a new connection.

TRENBEATH teaches communication of change information between a plurality of clients (publication clients / subscription clients) through a publish-subscribe connection wherein the change is sent without the first system having to initiate a new connection with the second system (via a store and forward transport / Internet message protocol) (abstract; col. 6, lines 19-35; col. 9, lines 45-52; col. 10, lines 3-13; col. 11, lines 30-67). It would be obvious to one skilled in the art to combine the teachings of JONES with the teachings of TRENBEATH in order to allow clients of disparate system types and network connections may participate in the replicating of data objects and change maintenance to those data objects (col. 2, lines 46-50).

As to claim 29, JONES teaches a persistence system cache (object storage / storage of object) for storing one or more objects (objects) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claim 30, JONES teaches the transaction manager merges the object change information (change notice) into the persistence system cache (object storage / storage of objects) (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37).

As to claim 31, JONES teaches the synchronization executor (ObjectMan) establishes the network, and the dispatcher distributes the object change information (change notice) via the established network (abstract; col. 2, line 1-61; col. 4, line 7-22; col. 10, lines 20-53; col. 14, lines 22-28; col. 14, lines 45 – col. 15, line 45; col. 25, line 59 – col. 26, line 37; see also fig. 1).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (703) 305-0439. The examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2126

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER

September 3, 2004